

ABSTRACT OF THE DISCLOSURE

A control device is provided for electrically controlling a drive power transmission device arranged on a driving power transmission path of a front-and rear wheel drive vehicle thereby to switch the drive mode of the vehicle selectively to either of a two-wheel drive mode and a four-wheel drive mode. The control device inhibits the drive mode from being switched to that commanded to be switched to when the vehicle is traveling at a slower speed than a predetermined speed and when the rotational speed difference between front and rear wheels is larger than a predetermined value. Further, the control device gradually decreases a present torque which the driving power transmission device is transmitting before the switching of the drive mode, to a target torque which the drive power transmission device is to transmit after the switching of the drive mode, when the difference between the present and target torques is more than another predetermined value at the time of the switching of the drive mode. Thus, the driving power transmission path can be prevented from generating the drive torque beyond a tolerable value as well as making a noise due to the instantaneous switching of the drive mode during the traveling of the vehicle, and the vehicle can be prevented from abruptly changing its motion by the cause of the instantaneous drive mode switching.